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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/738,543	12/17/2003	Torsten Gottschalk-Gaudig	WAS 0611 PUS / Wa 10239-S	8271
22045 7590 01/07/2010 BROOKS KUSHMAN P.C. 1000 TOWN CENTER TWENTY-SECOND FLOOR SOUTHFIELD, MI 48075			EXAMINER LIGHTFOOT, ELENA TSOY	
			ART UNIT 1792	PAPER NUMBER
			MAIL DATE 01/07/2010	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/738,543	Applicant(s) GOTTSCHALK-GAUDIG ET AL.	
	Examiner Elena Tsoy Lightfoot	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-19 and 30-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-19 and 30-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Withdrawal of Finality

The finality of the rejection of the last Office action has been withdrawn by the decision of Appeal conferees Chris Fiorilla and Tim Meeks on November 23, 2009, and, therefore, the finality of that action is withdrawn.

Response to Amendment

Amendment filed on February 6, 2009 has been entered. Claims 15-19, 30 and 31 are pending in the application.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Rejection of claims 17-19 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement has been withdrawn due to amendment.
3. Rejection of claims 17-19 under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for $R^1_nSiX_{4-n}$, wherein n is 1, 2, 3 as in claim 15 does not reasonably provide enablement for $R^1_3SiX_{y-n}$ because y is unknown, has been withdrawn due to amendment.
4. Rejection of claims 17-19 under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement as reciting $R^1_3SiX_{y-n}$ in claim 17 recites has been withdrawn due to amendment.
5. Claim 18 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

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Claim 18 recites performing silylation additionally with organosiloxane of the formula (II) which was not described in the specification. The Applicants' specification describes performing silylation either with (I) or (II) not with both compounds.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 18 recites " $R^3_nSiX_{y-n}$ ", wherein R^3 is unknown, and, thus, it renders the claim indefinite since it is practically impossible to understand what compound is used. Moreover, claim 17 recites organosiloxane (II) in *alternative* form only, and thus, the meaning of a *mixture* of the organosiloxane (II) with " $R^3_nSiX_{y-n}$ " is not clear

For this reason **claim 18 has been withdrawn from consideration** because the meaning of $R^3_nSiX_{y-n}$ and the meaning of a *mixture* of $R^3_nSiX_{y-n}$ with organosiloxane (II) is unclear.

8. Claim 15-17, 19, and 30-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15 recites "I or mixtures of I or II, and I and II being used alone or in any desired mixtures", which renders the claim indefinite because it is not clear why "I and II being used **alone**" is used after reciting "I or II". For examining purposes the phrase was interpreted as "I or

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mixtures of I or II, or any mixtures of I and II ~~and I and II being used alone or in any desired mixtures~~".

Examiner Note

The grounds of rejection over Barthel et al (US 5686054) and Tojo et al (US 5278204) have been withdrawn.

New grounds of rejections are as follows:

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 15-17, 19, and 30-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo et al (JP 04298538 A).

Endo et al discloses silica particles having average particle size of 0.1-5 microns and BET 100-700 m²/g (See [0012]) and obtained from silica particles containing 1-30/nm² of silanol groups, where 30-70% of the whole silanol groups are blockaded by being treated with silane coupling agents such as vinyltriethoxysilane (See Abstract). Thus, 70-30% of the whole 1-30/nm² silanol groups (i.e. 0.3-21 SiOH/nm²) would remain unblockaded, and thus, silica is *partly* hydrophobic silica.

Note that the amount 0.3-21 SiOH/nm² overlaps claimed range of 0.9-1.7 SiOH/nm²; and a degree of coverage $30\% \leq \tau \leq 70\%$ overlaps claimed degree of coverage of $1\% < \tau < 50\%$. It is

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well settled that overlapping ranges are prima facie evidence of obviousness. It would have been obvious to one having ordinary skill in the art to have selected the portion of Endo et al's range that corresponds to the claimed ranges.

As to claimed methanol number and claimed a contact angle θ , since the degree of hydrophobicity, i.e. contact angle θ and methanol number, is determined by the number of free SiOH groups, the methanol number would also be within claimed range of less than 30 or less than 20.

As to claimed amount of silane and claimed carbon content, since in the silica particles of Endo et al, 30%-50% of SiOH groups would be covered with *claimed vinyltriethoxysilane* such that claimed amount $0.9-1.7 \text{ SiOH/nm}^2$ would remain unblocked, the vinyltriethoxysilane would be used in the same amount as in claimed process, i.e. within 0.015 mmol/g-0.15 mmol/g per 100 m²/of silica BET surface, and, thus, the carbon content would be within claimed range of 0-2.0 wt %.

As to claims 16, 19, and 33, limitations of the claims are not addressed as being *optional*.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy Lightfoot whose telephone number is 571-272-1429. The examiner can normally be reached on Monday-Friday, 9:00AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elena Tsoy Lightfoot, Ph.D.
Primary Examiner
Art Unit 1792

January 7, 2010

/Elena Tsoy Lightfoot/